

## REMARKS – General

In view of the above amendments and the following remarks, reconsideration of the outstanding office action is respectfully requested.

The objection under U.S.C. 35 § 101 is respectfully traversed by Amendments to Claims 1-3. These amendments redirect the claimed subject matter to the useful, concrete, and tangible contributions of the present invention. In particular, this is an apparatus exploited method that directly relates, i.e. correlates, sound and light without the need for user dependent inputs and selections. Such an apparatus exploited method – and its apparatus – were further made applicable to human needs in a plurality of embodiments as disclosed for the sake of illustration.

In addition, paragraph 0079 line 1 on page 4 states that the apparatus of the present invention is to be an apparatus exploiting said method. Clearly, the method of the present invention, in turn, is not in isolation but rather exploited by the apparatus and vice versa. Paragraph 0025 line 3-5 on page 2 also defines one technical objective of the present invention. This is to eliminate any “user intervention or dependency” while being able to “correlate all wavelengths,” i.e. to exploit a direct mapping that is referenced to be “universal.” The method of Claims 1-3 may thus be defined as a so-called apparatus exploited method, which provides a “universal” correlation between sound and light as supported by the specification. Hence, the apparatus exploited method of these claims is explicitly directed to useful, concrete, and tangible results that far exceeds any non-statute mark; rather it resides in the area of statutory subject matter as a whole.

For example, Claims 1-3 as amended draws upon the apparatus exploited method of the present invention in providing an entirely new means to relate sound and light. This means does not rely on indirect criteria and selections that would otherwise only “associate” the two on a discrete basis. Paragraph 0056 line 3-6 on page 3 further references that the apparatus exploited method “eliminates all concerns” for subjective inputs, references, user based options, and the like. Rather, it provides a direct means of relating any sound and light such that their values are mapped in a continuous and seamless manner. This eliminates multiple steps that are otherwise required merely to associate them based on user inputs or even complex harmony schemes.

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In this respect, the apparatus exploited method of Claims 1-3 redefines and effectively limits the steps that are now required to relate sound and light. On top of this, it makes it possible to relate the two in a new, direct mapping with the features of a continuous, mutual, and universal correlation. Paragraph 0022 line 2 on page 2 explicitly dictates the terms of the correlation as being "direct." This provides for any sound or light to be mapped to one or the other without the need for any indirect selections. As reiterated in lines 1-5 of paragraph 0099 on page 7, the apparatus exploited method is able to be "applied to all wavelengths, without any user intervention or dependency." These claims as a whole lead to distinct, practical applications.

The new and useful ends of the apparatus exploited method include a continuous, mutual, and universal correlation between sound and light as recited in Claim 1. The specification further makes it clear that these features lend the present invention to specifically appeal to cognition-oriented applications, particularly to the non-discrete sounds or colors that humans see and/or hear. Paragraph 0029 line 3 on page 2 acknowledges these features, which explicitly include being "human cognition oriented" and being "continuous." The same paragraph states some of these cognition oriented applications, such as exploiting the continuous feature of the present invention to provide solutions for the "hearing and visually impaired." In this regard, when there is a need to augment a deficiency in sight or sound, for example, the apparatus exploited method of the present invention provides the direct means to apply a continuous correlation of any sound and light to address it. Paragraph 0096 line 2-5 further reiterates these attributes of the invention.

In another aspect, the apparatus exploited method is put to work in embodiments that are useful for music education as indicated in the top lines 5-9 on page 5 of paragraph 0083. Here, it is clear that the apparatus exploited method provides for a direct mapping of sound and light values even for instruments that are not confined to "discrete" musical notes or half notes, such as the violin. Paragraph 0097 lines 3-4 on page 6 further emphasize this attribute by analogy to a hypothetical piano with "infinitesimally small" subnotes or sounds. Useful, concrete, and tangible results such as these are made possible with the apparatus exploited method of Claims 1-3.

Furthermore, Claims 2-3 continue to redefine and effectively limit the steps that are required to relate sound and light in an apparatus exploited method. These claims draw upon the possible

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input order in the “mutual” correlation, i.e. from sound to light and light to sound, and indicate the steps to correlate one to the other. This mutual aspect had been indicated in paragraph 0001 line 3 on page 1. As in Claim 1, any user intervention or dependency is not required. Instead, the apparatus exploited method relies upon the given values of sound and light and those that derive from them, such as the octave number that so derives from the wavelength of sound. Claims 2-3 thus also limit the steps to mutually correlate sound and light as to be exploited by an apparatus.

The new and useful ends of the apparatus exploited method of Claims 1-3 are further evident by the kind of embodiments that they make possible. For example, the apparatus as disclosed in paragraph 0086 on page 5 exploits the method in a dynamic, visual orchestration apparatus. In particular, its lines 7-12 implies that this apparatus exploits the ability of the method to be applied to “any music instrument” regardless of sound range or non-discrete notation systems. Another apparatus as disclosed in paragraph 0094 exploits the method in a color language method for the “hearing impaired.” Clearly, these embodiments and others exploit the new and useful ends of the apparatus exploited method of Claims 1-3. Lines 1-6 of paragraph 0027 on page 2 also indicate that it enables the entire audible sound range to correlate to the entire visible light range for the first time that further defines its role in human cognition-oriented applications.

As stated herein, Claims 1-3 are entirely directed to the useful, concrete, and tangible results of the present invention. In addition, amendments to these claims now put them in a more favorable position. Hence, it is respectfully requested that the present rejection to them be withdrawn and the results of the claims as amended be re-assessed within statutory subject matter as a whole.

The remaining amendments to claims remove the structures of any multiple dependencies. Please see original or currently amended claims 4-20 and new claims 21-23 as provided in this amendment. The remarks that follow further exemplify the way in which these claims define the useful, concrete, and tangible results of the apparatus exploited method of the present invention, and the way in which such a method is in turn exploited by an apparatus in various embodiments.

Claim 7 regards an apparatus that exploits the method of the present invention to provide its user with a direct mapping of sound and light through a “physical or electronic” tool. Here, an object

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in three dimensions is to be constructed in layers as disclosed in paragraph 0082 on page 4 to provide a platform on which the user may point to any particular color of the visible light. In turn, the user may hear any subnote of audible sound to which it correlates. Lines 6-8 further indicates that it provides a dynamic platform on which the entire audible range is “superimposed” on the entire visible light range according to the correlation of sound and light.

Claims 9-12 regards an apparatus that exploits the method of the present invention in a hand movement dependent devise, which depending on the position of its pointer line up, provides the direct mapping of sound and light. Its preferred embodiment is disclosed in paragraph 0084 on page 5 that may also generate sound and/or light output. Regardless of the input order of sound or light, line 5 explicitly states that it provides an “effective” and practical medium to embody and generate the mutual correlation of sound and light for various needs, including educational. In contrast, the CMIDI system that is disclosed in paragraph 0085 on page 5 as a CMIDI file generating apparatus is another embodiment of the present invention. This apparatus provides a dynamic coupling among sound and light data for any given input of sound data per any time interval. The embodiment of this apparatus is also described in the lines 7-20 of paragraph 0091.

In this regard, it is respectfully requested that the examiner hereby considers this case in light of the amendments and their remarks as provided herein to grant allowance to this application. Clearly, the present invention contributes to the stock of human knowledge with actual results.

The useful, concrete, and tangible results of the present invention are further evident when compared with two other patents. These patents, namely to Hertha and McClard, have also been added to prior art references by amendment to the specification. The other patent to Kim as mentioned in the Office Action was already referenced. As further indicated by amendment, these patents contain the same concerns that have been raised as problematic in lines 1-3 of paragraph 0019 and line 3 of paragraph 0020 on page 2, including those of artificial conversions.

Hence, none of the references in the prior art are able to achieve the novel features of the present invention, which are briefly exemplified herein as those that provide a universal correlation that applies to all values of sound and light without the need for indirect, user selections.

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To reiterate, US Patent 6,686,529 (2004) of Gir-Ko Kim relies on a color/sound conversion table. It also relies on the use of a reference audible frequency or a reference visible frequency that is to be arbitrarily determined by the user. The objective of this patent is to find pleasing color/sound harmonics and the invention uses subjective parameters to do so. These include harmony frequency ratios, harmonic codes, and musical scale dividing rates. Hence, it does not put forth more than a color and sound "association" that depends on indirect, user inputs and selections. Paragraph 0004 of specification references this prior art and indicates some of its shortcomings.

Similarly, US Patent 5,689,078 (1995) issued to McClard seeks to produce music based upon one of two color models, namely RGB or HSB. One of these models may be mixed, matched, and scrambled as desired to correspond to various music parameters within the pre-indexed array values of conversions as provided. It relies on mere associations between either RGB or HSB values of colors and the music parameters of notes, number of voices, and velocity. This process does not claim the use of any kind of correlation that is independent of user-selected indexes.

US Patent 5,907,116 (1999) issued to Hertha conceptualizes the use of discrete, acoustical tones that are arbitrarily assigned to optical images of starlit skies. This association involves giving star groups or planets one of twelve tones that also depend on their gas, rock, or ice composition. Clearly, Hertha relies solely on assignments and not upon the use of any correlation whatsoever. This is a common, technical problem in the prior art, all of which rely on indirect associations. In sum, each of cited references in the specification fails to teach or suggest the claimed invention.

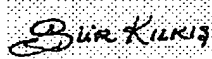
In contrast, paragraph 0022 on page 2 sets the differing objectives of the present invention. This is also implies the elimination of any need for user dependent criteria and selections. Paragraph 0056 lines 3-6 on page 3 further implies that the invention provides a universal correlation for all values of sound and light, which is free from such selections. Hence, the present invention contributes to the stock of human knowledge and provides useful, concrete, and tangible results to not associate but rather "correlate" sound and light without indirect user selections. Furthermore, it features the attributes of being continuous, mutual, and universal.

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**Conclusion**

For all of the above reasons, the applicant submits that the specification and claims are now in proper form, and that the claims all define patentably over the prior art. Any aspects of the amendment may also be discussed with the applicant, or the applicant's attorney at Nixon and Vanderhye in the case that the examiner is not able to contact the applicant first. Thus, we submit that this application is now in condition for allowance, which action we respectfully solicit.

Very respectfully,



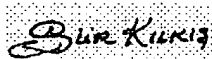
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